REMARKS

In the non-final Office Action, the Examiner rejects claims 1-16 and 27-40 under 35 U.S.C. § 103(a) as unpatentable over MAHESH et al. (U.S. Patent No. 6,891,858) in view of LEE et al. (U.S. Patent No. 7,017,176); rejects claims 17-21 under 35 U.S.C. § 103(a) as unpatentable over MAHESH et al. in view of OGAWA (U.S. Patent No. 5,272,728); and rejects claims 22-26 and 41 under 35 U.S.C. § 103(a) as unpatentable over MAHESH et al. in view of MILLET et al. (U.S. Patent No. 7,039,939). Applicant respectfully traverses these rejections. Claims 1-41 are pending.

Rejection under 35 U.S.C. § 103(a) based on MAHESH et al. and LEE et al.

Claims 1-16 and 27-40 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over MAHESH et al. in view of LEE et al. Applicant respectfully traverses this rejection.

Independent claim 1 recites a method of altering modem transmission characteristics, including setting a modem to transmit on a first upstream channel on a first frequency using first transmission characteristics; monitoring a quality of upstream transmissions from the modem on the first upstream channel; and setting the modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on the monitored quality. MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, do not disclose or suggest the above combination of features.

For example, MAHESH et al. and LEE et al. do not disclose or suggest setting a modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on a monitored quality, as recited in claim 1. The Examiner admits that MAHESH et al. does not disclose this feature and relies on column 4, lines 39-53 and column 6, lines 40-44 of LEE et al. as allegedly disclosing this feature of claim 1 (Office Action, pp. 6-7). Applicant respectfully disagrees with the Examiner's interpretation of LEE et al.

At column 4, lines 39-53, LEE et al. discloses:

> Accordingly, the present invention provides an apparatus and method for transmitting upstream data over two or more upstream channels. In one embodiment, a cable modem is disclosed. In general terms, a first upstream channel is obtained by the cable modem from the head end. The cable modem is configured to transmit data over the first upstream channel. A second upstream channel is then obtained from the head end. If the second upstream channel differs from the first upstream channel, the cable modem is configured to transmit data over the second upstream channel, as well as the first upstream channel. If the obtained second upstream channel does not vary from the first upstream channel, a next upstream channel is obtained until it varies from the first upstream channel or there are no available upstream channels.

This section of LEE et al. discloses that a cable modem transmits data over first and second upstream channels, where the second upstream channel differs from the first upstream channel. LEE et al. does not disclose that the cable modem transmits on the second upstream channel on a second different frequency. In fact, LEE et al. discloses that the upstream signal is from a single modem may exit the modem on one line that is split by a splitter into two lines having two upstream channels (column 7, lines 42-44). Therefore, LEE et al. discloses simultaneously transmitting on the multiple upstream channels. Furthermore, LEE et al. does not disclose or suggest that the cable modem transmits on the second upstream channel is based on a monitored quality. Therefore, LEE et al. does not disclose or suggest setting a modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on a monitored quality, as recited in claim 1.

At column 6, lines 40-44, LEE et al. discloses:

> Additionally, if one of the multiple upstream channels of a cable modem becomes unable to transmit data, another upstream channel may take over transmission. Thus, the present invention may increase the reliability of data transmission.

This section of LEE et al. discloses that if one multiple upstream channel of a cable modem becomes unable to transmit data, another upstream channel may take over transmission. This section of LEE et al. does not disclose or suggest transmitting on the other upstream channel on a different frequency. Therefore, this section of LEE et al. does not disclose or suggest that the

cable modem transmits on the second upstream channel is based on a monitored quality. Therefore, LEE et al. does not disclose or suggest setting a modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on a monitored quality, as recited in claim 1.

For at least the foregoing reasons, Applicant submits that claim 1 is patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination.

Claims 2-8 depend from claim 1. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Claims 9, 27, 30, 33, and claim 37 recite features similar to, yet possibly of different scope than, features recited above with respect to claim 1. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 1.

Claims 10-16 depend from claim 9. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 27.

Claims 28 and 29 depend from claim 27. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 30.

Claims 31 and 32 depend from claim 30. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 9.

Claims 34-36 depend from claim 33. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 33.

Claims 38-40 depend from claim 37. Therefore, these claims are patentable over MAHESH et al. and LEE et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 37.

Rejection under 35 U.S.C. § 103(a) based on MAHESH et al. and OGAWA et al.

Claims 17-21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over MAHESH et al. in view of OGAWA. Applicant respectfully traverses this rejection.

For example, independent claim 17 discloses a method of controlling transmission characteristics of cable modems. The method includes monitoring upstream transmission quality of one or more cable modems; and commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored quality, including changing from a first preamble length to a second different preamble length. MAHESH et al. and OGAWA, whether taken alone or in any reasonable combination, do not disclose or suggest one or more of these features.

For example, MAHESH et al. and OGAWA do not disclose or suggest commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored upstream transmission quality, including changing from a first preamble length to a second different preamble length, as recited in claim 17. The Examiner relies on Fig. 4; column 2, lines 31-58; and column 4, lines 52-63 of MAHESH et al. as allegedly disclosing commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored quality (Office Action, pp. 4-5). The Examiner further admits that MAHESH et al. does not disclose or suggest changing from a first preamble length to a second different

preamble length and relies on the abstract of OGAWA as allegedly disclosing this feature of claim 17 (Office Action, pg. 5). Applicant respectfully submits that OGAWA does not disclose or suggest the above feature of claim 17.

To begin, Applicant objects to the Examiner's piecemeal examination of the above feature of claim 17. That is, instead of addressing the feature of commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored upstream transmission quality, including changing from a first preamble length to a second different preamble length, the Examiner breaks the feature down into illogical parts by pointing to unrelated sections of two different references for allegedly disclosing different parts of the feature. Such attempts at reconstructing Applicant's claims are clearly impermissible.

M.P.E.P. § 2106 II(C), which covers this situation, recites (emphasis added):

> Finally, when evaluating the scope of a claim, every limitation in the claim must be considered. USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981) ("In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made.").

Here, the Examiner has dissected claim 17 into discrete elements and then evaluated the elements in isolation. As such, Applicants respectfully submit that the Examiner has not considered the claim as a whole. As is made apparent from the above-cited section of the M.P.E.P., such attempts at reconstructing Applicant's claims are clearly impermissible.

In the abstract, OGAWA discloses:

> In a conventional case where a preamble length is adjusted in a communication network, even if there is a frame (cycle) in which the length of the preamble has already been adjusted by a preceding station in the direction in which it is increased or decreased, if it is determined on the basis of the decision conditions of an active station that the length of the preamble of such a frame should be increased or decreased, the length of the preamble is adjusted in the direction in which it is further increased or decreased.

> However, according to the present invention, the length of each preamble which is inputted to a buffer is monitored, and if it is determined that the preamble length of a frame has already been adjusted in the same increasing or decreasing direction, adjustment of the preamble length of the frame is inhibited and such adjustment is carried forward to a succeeding frame. If it is determined that the preamble length of the succeeding frame has also already been adjusted in the same increasing or decreasing direction, the adjustment of the preamble length of the frame is further carried forward to a following frame. Accordingly, repetition of preamble length adjustment with respect to the same frame is prevented, so that resistance to data destruction can be remarkably improved.

This section of OGAWA discloses inhibiting adjustment of a preamble length of a frame if it is determined that the preamble length of the frame has already been adjusted in the same increasing or decreasing direction. This section of OGAWA does not disclose or suggest changing a preamble length based on a monitored upstream transmission quality. Rather, as noted above, this section of OGAWA discloses inhibiting adjustment of a preamble length if the preamble length has already been adjusted. This section of OGAWA has nothing to do with an upstream transmission quality at all. Therefore, this section of OGAWA does not disclose or suggest commanding at least one of the one or more cable modems to change its transmission characteristics based on the monitored upstream transmission quality, including changing from a first preamble length to a second different preamble length, as recited in claim 17.

The Examiner further states that "[i]t would have been obvious…to use Ogawa technique in Mahesh to specifically changing the preamble length when the modulation profile is changed, thereby improving the quality of the transmission" (Office Action, pg. 5).

Applicant submits that the Examiner's allegation is merely a conclusory statement regarding what the Examiner believes to be an alleged benefit of the combination. Such motivation statements have consistently been found to be insufficient for establishing a prima facie case of obviousness. In this respect, Applicant relies upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory

statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. The Examiner does not provide the articulated reasoning required by KSR International Co.

Applicant submits that the Examiner's allegations do not explain why incorporating the method of OGAWA into the access network of MAHESH et al. would improve the quality of the transmission, as the Examiner alleges. Thus, the Examiner does not provide the articulated reasoning required by KSR International Co. In fact, OGAWA has nothing to do with transmission quality at all. Thus, Applicant submits that the Examiner's purported motivation to combine the cited references is merely conclusory and based on impermissible hindsight. Accordingly, a prima facie case of obviousness has not been established with respect to claim 17.

For at least the foregoing reasons, Applicants submit that claim 17 is patentable over MAHESH et al. and OGAWA, whether taken alone or in any reasonable combination.

Claims 18-21 depend from claim 17. Therefore, these claims are n patentable over MAHESH et al. and OGAWA, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 17.

Rejection under 35 U.S.C. § 103(a) based on MAHESH et al. and MILLET et al.

Claims 22-26 and 41 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over MAHESH et al. in view of MILLET et al. Applicant respectfully traverses this rejection.

Independent claim 22 discloses a cable modem termination system that includes a memory to store instructions, and a processor to execute the instructions in the memory to monitor upstream transmission quality of one or more cable modems, and instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to a second different time division

multiplexed timeslot size, when the monitored quality meets a specified criteria. MAHESH et al. and MILLET et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, MAHESH et al. and MILLET et al. do not disclose or suggest a processor to execute the instructions in the memory to instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to a second different time division multiplexed timeslot size, when the monitored quality meets a specified criteria, as recited in claim 22. The Examiner admits that MAHESH et al. does not disclose this feature and relies on Fig. 7; column 11, line 17 – column 12, line 35; and column 14, line 67 – column 15, line 51 (which describes Fig. 7) of MILLET et al. as allegedly disclosing this feature of claim 22 (Office Action, pg. 15). Applicant respectfully disagrees with the Examiner's interpretation of MILLET et al.

At column 11, line 17 – column 12, line 35, MILLET et al. discloses that an upstream signal quality is compared to a threshold signal quality level. If the signal quality of the upstream band being used by the selected modem is less than the threshold, the MAC layer assigns another time slot to the selected modem. If the signal quality is above the threshold level, it is considered an acceptable upstream band. Assigning another time slot does not correspond to changing from a first time division multiplexed timeslot size to a second time division multiplexed timeslot size. MILLET et al. does not disclose that the other time slot is of a different size than the first time slot. Therefore, this section of MILLET et al. does not disclose or suggest a processor to execute the instructions in the memory to instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to a second different time division multiplexed timeslot size, when the monitored quality meets a specified criteria, as recited in claim 22.

At column 14, line 67 – column 15, line 51, MILLET et al. discloses a time slot 714 that includes a first test period 716 and a second test period 718. MILLET et al. further discloses that, after time slot 714, the CMTS can determine on which frequency to transmit. In other words, this section of MILLET et al. disclosing running tests to determine the best frequency on which to transmit. This section of MILLET et al. does not disclose or suggest changing from a first time division multiplexed timeslot size to a second different time division multiplexed timeslot size. In fact, this section of MILLET et al. has nothing to do with a time division multiplexed timeslot size at all. Therefore, this section of MILLET et al. does not disclose or suggest a processor to execute the instructions in the memory to instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to a second different time division multiplexed timeslot size, when the monitored quality meets a specified criteria, as recited in claim 22.

For at least the foregoing reason, Applicant submits that claim 22 is patentable over MAHESH et al. and MILLET et al., whether taken alone or in any reasonable combination.

Claims 23-26 depend from claim 22. Therefore, these claims are patentable over MAHESH et al. and MILLET et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 22.

Independent claim 41 recites features similar to, yet possibly of different scope than, features recited above with regard to claim 22. Therefore, claim 41 is patentable over MAHESH et al. and MILLET et al. for at least reasons similar to the reasons given above with respect to claim 22.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully requests the Examiner's reconsideration of the application and the timely allowance of the pending claims. If the

Examiner does not believe that all pending claims are now in condition for allowance, the Examiner is urged to contact the undersigned to expedite prosecution of this application.

As Applicant's remarks with respect to the Examiner's rejections overcome the rejections, Applicant's silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, reasons to modify a reference and/or combine references, assertions as to dependent claims, etc.) is not a concession by Applicant that such assertions are accurate or that such requirements have been met, and Applicant reserves the right to dispute these assertions/requirements in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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